

CLAIMS:

1. An implantable medical device having a connector header adapted to be coupled through the use of a tool to an electrical lead connector element of an elongated electrical medical lead, wherein:

the connector header is formed of a header body having at least one header connector bore and a header grommet aperture having a grommet aperture sidewall;

a connector block is disposed within the connector header having a threaded bore having a spiral bore thread of a bore thread diameter aligned with the header grommet aperture and a connector block bore aligned with the header connector bore adapted to receive a lead connector element when a proximal connector assembly of the elongated electrical medical lead is received in the header connector bore;

a penetrable grommet formed of an elastomer material is disposed within the header grommet aperture; and

a setscrew having a setscrew socket in a setscrew body extending between a setscrew socket head and a setscrew working end is disposed between the penetrable grommet and the connector block, the setscrew body having a spiral setscrew thread mating with the spiral bore thread of the threaded bore, and the setscrew socket head having a socket head diameter exceeding the bore thread diameter, whereby the setscrew socket head is adapted to be engaged by the tool inserted through the penetrable grommet to enable rotation of the setscrew body within the threaded bore to tighten the setscrew working end against or to loosen the setscrew working end from a lead connector element received in the connector block bore, and the socket head diameter inhibits advancement of the setscrew all of the way through the threaded bore.

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2. The implantable medical device of Claim 1, wherein the setscrew is rotatable by a setscrew tool inserted through the penetrable grommet into the setscrew socket until the enlarged diameter setscrew socket end is retracted into frictional engagement with the penetrable grommet, whereby the frictional engagement stabilizes the setscrew in the retracted position and inhibits spontaneous migration of the setscrew body through the threaded bore disposing the setscrew working end in the connector block bore.

3. The implantable medical device of Claim 2, wherein the header body is formed having a setscrew retention space between the connector block and the penetrable grommet receiving the setscrew body when the enlarged diameter setscrew socket end is retracted into frictional engagement with the inner end wall of the penetrable grommet.

4. The implantable medical device of Claim 2, wherein the setscrew socket head surrounding the setscrew socket is formed with a funnel-shaped opening without a sharp cutting edge that guides a setscrew tool end into the setscrew socket and provides a space accommodating any elastomer material of the penetrable grommet displaced by the setscrew tool.

5. The implantable medical device of Claim 2, wherein the setscrew socket head comprises a ring of a plastic material molded around a portion of the setscrew body.

6. The implantable medical device of Claim 2, wherein the setscrew socket extends for substantially the full length of the setscrew body from the setscrew socket head to the setscrew working end to maximize setscrew socket depth and mutual contact area of the setscrew and the setscrew tool.

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7. The implantable medical device of Claim 1, wherein:

the penetrable grommet comprises a generally cylindrical elastomer body having a grommet central axis and including a self-sealing passage extending between opposed grommet inner and outer end walls enabling passage of the tool therethrough into the setscrew socket for rotating the setscrew and sealing of the passage upon withdrawal of the tool; and

the setscrew is rotatable by a setscrew tool inserted through the self-sealing passage into the setscrew socket until the enlarged diameter setscrew socket end is retracted into frictional engagement with the inner end wall of the penetrable grommet, whereby the frictional engagement stabilizes the setscrew in the retracted position and inhibits spontaneous migration of the setscrew body through the threaded bore disposing the setscrew working end in the connector block bore.

8. The implantable medical device of Claim 7, wherein the header body is formed having a setscrew retention space between the connector block and the grommet inner end wall receiving the substantially all of the setscrew when the enlarged diameter setscrew socket end is retracted into frictional engagement with the inner end wall of the penetrable grommet.

9. The implantable medical device of Claim 7, wherein the setscrew socket head surrounding the setscrew socket is formed with a funnel-shaped opening without a sharp cutting edge that guides a setscrew tool end into the setscrew socket and provides a space accommodating any elastomer material of the penetrable grommet displaced by the setscrew tool.

10. The implantable medical device of Claim 7, wherein the setscrew socket head comprises a ring of a plastic material molded around a portion of the setscrew body.

11. The implantable medical device of Claim 7, wherein the setscrew socket extends for substantially the full length of the setscrew body from the setscrew socket head to the setscrew working end to maximize setscrew socket depth and mutual contact area of the setscrew and the setscrew tool.

12. The implantable medical device of Claim 1, wherein the setscrew socket head surrounding the setscrew socket is formed with a funnel-shaped opening without a sharp cutting edge that guides a setscrew tool end into the setscrew socket and provides a space accommodating any elastomer material of the penetrable grommet displaced by the setscrew tool.

13. The implantable medical device of Claim 12, wherein the setscrew socket head comprises a ring of a plastic material molded around a portion of the setscrew body.

14. The implantable medical device of Claim 12, wherein the setscrew socket extends for substantially the full length of the setscrew body from the setscrew socket head to the setscrew working end to maximize setscrew socket depth and mutual contact area of the setscrew and the setscrew tool.

15. The implantable medical device of Claim 1, wherein the setscrew socket head comprises a ring of a plastic material molded around a portion of the setscrew body.

16. The implantable medical device of Claim 1, wherein the setscrew socket extends for substantially the full length of the setscrew body from the setscrew socket head to the setscrew working end to maximize setscrew socket depth and mutual contact area of the setscrew and the setscrew tool.

17. The implantable medical device of Claim 1, wherein a setscrew retention space is provided between the penetrable grommet and the connector block enabling the retraction of the setscrew to a retracted position with the setscrew substantially disposed within the setscrew retention space.

18. In an implantable medical device having a connector header adapted to be coupled through the use of a tool to an electrical lead connector element of an elongated electrical medical lead, wherein:

the connector header is formed of a header body having at least one header connector bore and a header grommet aperture having a grommet aperture sidewall;

a connector block is disposed within the connector header having a threaded bore having a spiral bore thread of a bore thread diameter aligned with the header grommet aperture and a connector block bore aligned with the header connector bore adapted to receive a lead connector element when a proximal connector assembly of the elongated electrical medical lead is received in the header connector bore;

a penetrable grommet formed of an elastomer material is disposed within the header grommet aperture; and

a setscrew having a setscrew socket in a setscrew body extending between a setscrew socket head and a setscrew working end is disposed between the penetrable grommet and the connector block, the setscrew body having a spiral setscrew thread mating with the spiral bore thread of the threaded bore, and the setscrew socket head having a socket head diameter exceeding the bore thread diameter, a method of stabilizing the setscrew in a retracted position comprising:

inserting a setscrew tool through the penetrable grommet into the setscrew socket;

rotating the setscrew tool to rotate the setscrew to a retracted position until the enlarged diameter setscrew socket end is retracted into frictional

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engagement with the penetrable grommet, whereby the frictional engagement stabilizes the setscrew in the retracted position and inhibits spontaneous migration of the setscrew body through the threaded bore into the connector block bore.